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**From:** Chan, Valerie
**Sent:** Thur 4/2/2015 1:52:49 PM
**Subject:** April 2, 2015 VI MItigation Conference Call & Summary of February 2015 Round 1 sampling, South Dayton Dump and Landfill Site ~COR-038443-62~
Mitigation Summary Database_040215.xlsx
038443Patterson-Renninger-27-Tbls.xlsx
Summary of February 2015 Upgraded IA Sampling s189AI-XT2-GS IA AA-2012-2....xls
038443Memo-24-B&G Trucking, Building 9, 1951 Dryden Road (LF).pdf

The VI Mitigation Conference call is scheduled for today at 2:30 PM ET / 1:30 PM CT.

- New Teleconference 1-866-721-5495

- New Access Code 14627342

Please find attached the following files

- Mitigation Summary Database

- Methane monitoring results

- Validated February 2015 sample results

- CRA memorandum detailing benzene concentrations in B&G Trucking Building 8, dated July 10, 2014

Please find attached the validated sample results for the seven buildings at the South Dayton Dump and Landfill Site that were sampled in February 2015. Restrictions to Site access in 2014 delayed field work and prevented completion of the proficiency sampling specified in the VI Mitigation Work Plan. On December 18, 2014, CRA and USEPA agreed to complete two rounds of IA and SS sampling, one in February 2015 and one in July 2015 to evaluate the installed sub-slab depressurization systems (SSDSs).

There were no sub-slab (SS) or indoor air (IA) exceedances in February 2015 at three of the seven buildings:

1. Building 14 – Bullseye Amusements, 2003 Dryden Road

2. Building 15 – SIM Trainer, 2031 Dryden Road

3. Building 17 – Megacity Construction – 2075 Dryden Road

The remaining 4 buildings with exceedances are discussed below. CRA suspects there are small, localized sources of shallow TCE contamination in the soil immediately beneath Buildings 9 and 12.

Building 8 & 9 – B&G Trucking

*Benzene*

Indoor air concentrations of benzene in Buildings 8 and 9 were greater than the ODH screening level in February 2015 at locatios IA-8-A, IA-8-D, and IA-9-B. Sub-slab concentrations of benzene in both buildings have never exceeded ODH screening levels, which is indicative that sources within the building and ongoing daily human activities are likely causing or contributing to the indoor air benzene concentration. Indoor air benzene concentrations are not the result of a complete VI pathway, as detailed in the CRA memo dated July 10, 2014 (attached). During the February 2015 sample event, CRA noted use of acetylene and kerosene heaters, and the presence of paint.

Building 8 (B&G Trucking) concentrations (ppb)

| Parameter | Location | January 2012 | March 2012 | August 2012 | September 2013 | January 2014 | February 2015 | ODH Screening Level | ODH Action Level |
|---|---|---|---|---|---|---|---|---|---|
| Sample Event | | 2012 VI Investigation | | | 30 – day proficiency | 180-day proficiency | 2015 - Round 1 sampling | | |
| Benzene | IA-8-A | -- | -- | -- | 0.15 J | 1.6 J | 8 | 2 | 20 |
| | IA-8-C | -- | 20 | 0.44 | 0.38 | -- | | -- | |
| | IA-8-D | -- | -- | -- | | | 0.55 | | |
| | IA-8-F | -- | 13 | 0.99 / 0.79 | 0.57 | 0.52 J | 2.0 | | |
| | SS-8-A | 1.5 U | 6.0 U | 1.1 J | 1.8 U | 0.56 U | 0.57 J | 20 | 200 |
| | SS-8-D | | | | | | | | |

Building 9 (B&G Trucking) concentrations (ppb)

| Parameter | Location | January 2012 | March 2012 | October 2013 | March 2014 | May 2014 | February 2015 | ODH Screening | ODH Action |
|---|---|---|---|---|---|---|---|---|---|
| Sample Event | | 2012 VI Investigation | | 30 – day proficiency | 180-day proficiency | 180-day confirmatory sample | 2015 - Round 1 sampling | Level | Level |
| Benzene | IA-9-A | -- | 17 U | 5.3 U | **17 J** | | 8.5 U | 2 | 20 |
| | IA-9-B | -- | 48 U | 14 U | **8.1** | 0.15 J | | **4.2** | |
| | SS-9-A | 1.8 U / 1.8 U | 9.2 U | -- | -- | -- | 3.6 U | 20 | 200 |
| | SS-9-B | 1.4 U | 12 U | -- | | | -- | | |

*Trichloroethene (TCE)*

Sub-slab concentrations of TCE in Buildings 8 and 9 remain greater than ODH screening and action levels, but have decreased considerably from the initial sampling completed in January 2012 as shown in the following table:

| | January 2012 | March 2012 | August 2012 | September 2013 | January 2014 | March 2014 | May 2014 | February 2015 | ODH Screenin |
|---|---|---|---|---|---|---|---|---|---|
| Sample Event | 2012 VI Investigation | | | | | | 180-day confirmatory sample | 2015 - Round 1 sampling | Level |
| Location | | | | | | | | | |
| SS-8-A | ***1,400*** | ***960*** | ***1,800*** | ***780*** | ***220*** | ***240*** | -- | ***160*** | 20 |
| SS-8-B | **31** | **26** | **95** | -- | -- | -- | -- | -- | |
| SS-8-C | 11 | 17 | **35** | -- | -- | -- | -- | | -- |
| SS-8-D | ***420*** | ***420 / 350*** | ***930*** | ***200 / 290*** | **36 / 43** | | | 0.48 | |
| SS-8-F | | | | | 5.3 / 5.6 5.3 | | | | |
| SS-9-A | ***1,800 / 1,800*** | | | | | | -- | -- | -- |
| SS-9-E | | | | | | | | | |

Notes:

**Bold Value:** Detected Value was greater than ODH Screening Level

***Bold & Italic Value***: Detected Value was greater than ODH Screening and Action levels

--: Not sampled

The vacuums at Building 8 indicated adequate depressurization on the February 17, 2015 sample date, with the exception of EP-4 (0.0" w.c) and the two sub-slab locations in its vicinity (SS-8-D and SS-8-J). As a result, on February 20, 2015, the blower on EP-4 in Building 8 was replaced, and the vacuum at those locations improved (EP-4: -3"w.c.; SS-8-D: -0.341; and SS-8-J: -0.369).

The vacuums at Building 9 indicated adequate depressurization with the exception of SS-9-D, which had a reading of 0.00107" w.c.

Building 12 – Overstreet Painting and S&J Precision

Building 12 (Overstreet Painting and S&J Precision) concentrations (ppb)

| Parameter | Location | January 2012 | March 2012 | October 2013 | January 2014 | April 2014 | February 2015 | ODH Screening | ODH Action |
|---|---|---|---|---|---|---|---|---|---|
| Sample Event | | 2012 VI Investigation | | 30 – day proficiency | 180-day proficiency | Confirmatory sampling | 2015 - Round 1 sampling | Level | Level |
| Benzene | IA-12-OP-A | -- | **9.7** | **8.8** | **3.5** | **7.4** | R | 2 | 20 |
| | IA-12-OP-B | -- | **14** | **11** | **5.0** | ***25*** | | -- | |
| | SS-12-OP-A | 2.7 U | 3.9 U | 14 U | 1.3 U | 4.6 U | 1.1 U | 20 | 200 |
| | SS-12-OP-B | 2.7 U | 13 U | 11 U | | | 4.5 U | | |
| Cis-1,2-DCE | SS-12-OP-A | **570** | **920** | **990** | 140 | 260 | 94 | 370 | 3,700 |
| | SS-12-OP-B | | | | | | | | |
| | SS-12-SJ-B | **570** | **530** | | | | | | |
| TCE | SS-12-OP-A | ***2,400*** | ***2,600*** | ***4,800*** | | ***710*** | ***950 270*** | 20 | 200 |

| | | | | | | |
|---|---|---|---|---|---|---|
| SS-12-OP-B | *2,800* | *5,400* | *4,700* | *4,500* | *1,100* | *1,500 / 1,500* |
| SS-12-SJ-B | *5,600* | *5,600* | *6,700 / 7,000* | *6,400 / 5,300* | *1,600 / 6,100* | *2,000* |
| SS-12-SJ-C | | | *230* | 180 | 31 | 17 | 9.5 | -- |

The concentration of cis-1,2-dichloroethene (cis-1,2-DCE) in Overstreet Painting and S&J Precisions have decreased to less than the ODH screening level.

TCE sub-slab concentrations have decreased since the installation of the sub-slab mitigation systems, but remain greater than the ODH screening and action levels at all sampled locations.

The Overstreet Painting indoor air concentration of benzene at IA-12-OP-A were greater than ODH screening levels, and greater than sub-slab benzene concentrations. The sub-slab concentrations of benzene in Overstreet Painting have never been detected above ODH screening levels, and the 1.5 to 1.6 ratio of IA to SS benzene concentrations are significantly greater than the 0.0089 building attenuation factor calculated based on radon concentrations measured in March 2012 (see table below). This indicates that the background sources likely contribute to the indoor air benzene concentrations, which are not a result of vapor intrusion from sub-slab soil vapor.

Building 12 Overstreet Painting Radon Concentrations and Attenuation Factors

| Sample Location | Radon Concentration (pCi/L) | Attenuation Factor | Average Building Attenuation |
|---|---|---|---|
| IA-12-OP-A | 2.1 | 0.0050 | 0.0089 |
| SS-12-OP-A | 418 | | |
| IA-12-OP-B | 2.0 | 0.0039 | |
| | SS-12-OP-B | | |

The vacuums in Building 12 indicated adequate depressurization (Column AA of the Mitigation Summary Database).

Building 24 – Globe Equipment

CRA collected confirmatory samples in Building 24 (Globe Equipment) at SS-24-B and IA-24-B to investigate the slight trichloroethene (TCE) exceedance at SS-24-B and tetrachloroethene (PCE) in indoor air at IA-24-B that was detected in the December 2014 samples. The slight TCE exceedance at SS-24-B was still evident in the February 2015 sample.

| Parameter | Concentration (ppb) | | | | | |
|---|---|---|---|---|---|---|
| Date | Jan. 2012 | Mar. 2012 | Aug. 2012 | Sept. 2013 | Feb. 2014 | I |
| Sample Event | 2012 VI Investigation | | | 30-day | 180-day proficiency | |

| | | | | |
|---|---|---|---|---|
| Trichloroethene (TCE) | 37 | 30 | 48 | 6.5 / 7.1 Inaccessil (SS-24-C sampled= 1.1 ppb) |

CRA proposes to expand the scheduled July 2015 sampling to include SS-24-B.

CRA notes that the vacuum at SS-24-B has been at or less than -0.001, which is less than the acceptable threshold of -0.004" w.c.

As detailed in the email to USEPA sent on February 2, 2015, the extraction fans in Building 24 are operating at maximum capacity and there is no way to increase vacuum on the system. The minor TCE exceedance at SS-24-B is likely due to its location in the center of Building 24, combined with the factor of tight, silty, sub-surface soil.

PCE was detected in December 2014 at IA-24-B at a concentration of 41 ppb, which was greater than the screening level of 25 ppb. The PCE concentration at the same location in February 2015 was 0.14 J ppb; there were no PCE indoor air exceedances in February 2015. As discussed in the email sent on January 13, 2015, the December 2014 indoor air exceedance of PCE was a one-time occurance and was likely not due to vapor intrusion.

Overall, the sub-slab depressurization systems are successfully decreasing the concentrations of vapor intrusion contaminants. However, CRA suspects there are small, localized sources of shallow TCE contamination in the soil immediately beneath Buildings 9 and 12, based on the concentrations which remain above screening levels.

The Respondents propose to cease SSDS operations at Buildings 14, 15, and 17, which have no SS or IA exeedances.

Thank you,

Valerie

--

**Valerie Chan, P. Eng.**

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